



# A Grain of Salt<sup>®</sup>

Information to empower mindful choices toward a healthier life.

## Salt Your Way To Health

by Dr. David Brownstein, MD

### Dietary Villain or Foundation of Health?

Low-salt diets have been recommended for many years. It is not too hard to find an article in a magazine or medical journal recommending that the readers lower their salt intake. Like dietary fats, salt has become a convenient boogeyman, responsible for all manner of health ills. Government agencies, the American Medical Association, and many dietary groups all recommend a low-salt diet.

Conventional wisdom holds that consuming less salt will lower your blood pressure and reduce your chances of heart disease or a stroke. By now, everyone knows that a low-salt diet is healthy, right? Wrong. But unfortunately, this is another one of those cases where conventional medical wisdom simply does not add up.

To develop an accurate understanding of the importance of salt in a healthy diet, we must look beyond what passes for “conventional wisdom.” A review of the research literature, as well as my own clinical experiences have convinced me that unrefined salt is vital to good health.

### Hypertension and Salt

Early in my medical career, I accepted the “low salt = lowered blood pressure” hypothesis unquestionably. My medical training was clear: A low-salt diet was good and a high-salt diet was bad. In all hypertensive cases, I was taught to promote a low-salt diet. In fact, I was taught that in order to prevent people from becoming hypertensive, it was better to encourage them to adopt a life-long dietary plan of low-salt. However, my experience with promoting a low-salt diet to treat hypertension was not successful. Not only did I find a low-salt diet relatively ineffective at lowering blood pressure, but I also found a low-salt diet made my patients miserable due to the poor taste of their low-salt food.

It wasn't until I began to look at my patients in a more holistic manner that I began to research the medical literature about salt. What I found was astounding; there is little data to support low-salt diets being effective at treating hypertension for the vast majority of people. Also, none of the studies looked at the use of unrefined sea salt, which contains many valuable vitamins and minerals such as magnesium and potassium, which are vital to maintaining normal blood pressure.

The conclusion that salt causes high blood pressure is based primarily on a couple of studies; neither have conclusively estab-

lished a causal link between salt consumption and hypertension.

Although considered a part of medical orthodoxy, the idea that salt consumption causes high blood pressure is relatively recent, and is, in fact, based on questionable conclusions drawn from a handful of studies.

The first report of a relationship between salt and high blood pressure appeared in 1904. Two researchers, Armbard and Beujard, asserted that salt deprivation was associated with lowered blood pressure in hypertensive patients. Over the next 50 years, this theory was tested in various studies, which usually involved giving test animals huge amounts (10-20 times greater than normal) of refined salt, to induce hypertension. As would be expected, when the animals were no longer overdosed, the blood pressure levels returned to normal.

Given the high amounts of salt being given to the animals, the correlation to a human population should have been suspect, but that did not stop medical researchers from erroneously extrapolating the results to human salt consumption.

The most popular study cited to prove the “increased salt = elevated blood pressure” link was the INTERSALT Trial. This study looked at over 10,000 subjects aged 20-59 from 52 centers in 39 countries. The authors of the study looked at the relationship between electrolyte excretion (i.e. sodium in the urine) and blood pressure. A higher salt intake will result in a larger amount of sodium excreted in the urine. Although there was a slight relationship between blood pressure and sodium excretion, a “smoking gun” could not be found. This study showed only a mild decrease in blood pressure, even when there was a dramatic decrease in salt excretion.

The results of this study did show that various indigenous groups in South America and Africa did consume relatively little salt and had low blood pressure. But these tribes were relatively untouched by modern life as whole – they generally did not drink or smoke, they were physically active and their diets consisted primarily of whole, unprocessed foods. In all likelihood, these factors were more significant in determining blood pressure levels than relative salt intake.

Study after study has failed to establish a significant causal relationship between salt intake and hypertension. In fact, there is some research that would seem to point to a different conclusion.

Every 10 years, the government conducts the National Health and Nutrition Examination Survey (NHANES). This comprehensive analysis of thousands of citizens looks at various markers of health, including the relationship between inadequate mineral intake and hypertension. After reviewing the data gathered from several surveys, researchers concluded “Our analysis confirms once again that inadequate mineral intake (calcium, potassium and magnesium) is the dietary pattern that is the best predictor of elevated blood pressure in persons at increased risk of cardiovascular disease.”

The Center for Disease Control's own data over the last 30 years clearly shows little relationship between low-salt diets and



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hypertension. This data unequivocally shows that ensuring adequate mineral intake is much more important to maintaining low blood pressure.

## Salt & Heart Disease

Another purported benefit of a low-salt diet is a reduced risk of cardiovascular incidents, such as heart attacks or strokes. But again, the evidence is less than overwhelming. In fact, there is some compelling research which seems to indicate that low-salt diets may actually increase the likelihood of a cardiovascular event.

Eleven trials, which included follow-up from six months to seven years, were reviewed. Researchers found that there was no difference in deaths and cardiovascular events between the low-salt groups and the high-salt groups. Systolic and diastolic blood pressure declined in the low-salt group by very small amounts. The authors of this review comment that the miniscule lowering of blood pressure with a low-salt diet did not result in any significant health benefit. They also comment, "It is also very hard to keep on a low-salt diet."

In another study, researchers examined the relationship between a low-sodium diet and cardiovascular mortality. Nearly 3,000 hypertensive subjects were studied. The result of this study was that there was a 430% increase in myocardial infarction (heart attack) in the group with the lowest salt intake versus the group with the highest salt intake.

Why would a low-sodium diet predispose one to having a heart attack? Low-sodium diets have been shown to cause multiple nutrient deficiencies, including depletion of minerals such as calcium, magnesium and potassium, as well as exhausting B-vitamin stores. There are numerous studies touting the benefits of magnesium in treating cardiovascular disorders. Adequate amounts of potassium and B-vitamins are also crucial for healthy heart. Many studies have shown that a deficiency of minerals, particularly calcium, potassium and magnesium is directly related to the development of heart disease as well as hypertension.

## Unrefined Salt & Health?

We have established that a low-salt diet is not very effective at significantly lowering blood pressure in most people. In fact, as salt levels have declined in this country over the last 50 years, there has been no trend toward lowered blood pressures in the population. Could mineral salt usage result in a significantly lowered blood pressure? Many minerals, including magnesium and potassium have a direct anti-hypertensive effect. As previously mentioned, the NHANES study revealed that a pattern of low mineral intake, specifically magnesium, potassium and calcium were directly associated with hypertension. Repeated measurements over 20 years have confirmed the relationship between low mineral intake and elevated blood pressure.

Unrefined salt has a wide range of minerals including potassium and magnesium, providing the body with a complex of nutrients that it needs to function optimally. The use of unrefined salt will not cause elevated blood pressure; in fact, due to its abundance of minerals, it can actually help lower the blood pressure in hypertensive patients.

## Salt & Special Health Concerns

Researchers have looked at numerous studies to arrive at their recommendations for sodium intake. Hypertensive patients can improve blood pressure moderately by limiting their sodium intake to 3-7 grams (app. 1.5-7 teaspoons) per day. Too much of anything can be a problem for the body. Salt, like any other substance, should not be taken in excess. Since refined salt is a toxic substance, there should not be any refined salt in anyone's diet.

However, there is a great difference between refined and unrefined salt. I recommend only the use of unrefined salt in one's diet. This will supply the body with over 80 minerals that are useful for maintaining the normal functioning of the body. My experience has shown that the use of unrefined sea salt has not resulted in elevated blood pressure in my patients. The addition of small amounts of unrefined salt to food or cooking will not adversely affect blood pressure or other health parameters in someone with normal kidney function.

While there is considerable research indicating that unrefined salt can be an important part of a healthy diet, there are some situations that do require special consideration.

For example, there are some hypertensive patients who are salt sensitive. Salt sensitivity is defined as an increase in blood pressure due to a high sodium intake. Not all hypertensive patients exhibit salt sensitivity. The only way to tell if an individual with hypertension will respond (via lowered blood pressure) to a low-salt diet is to institute a low-salt diet. The research shows that older individuals with hypertension will have a modest response. A review of 56 trials showed that a low-salt diet had minimal effect on blood pressure in the vast majority of people studied.

Another special concern related to those with kidney problems. Salt is excreted in the kidneys and individuals with renal failure will have a decreased ability to clear salt from their diets. These individuals must watch their salt intake carefully. If you have renal failure, I suggest you speak with your doctor before instituting any dietary change, including a change in salt intake.

## Final Thoughts

Although promoted by conventional medicine as part of a healthy diet, my experience has clearly shown the fallacy of low-salt diets. They are not associated with a reduction in blood pressure for the vast majority of the population and also have adverse effects on numerous metabolic markers including elevated insulin levels and insulin resistance. Low sodium diets have been associated with elevating total cholesterol and LDL cholesterol levels, which, in turn, has been associated with cardiovascular events.

Furthermore, it has demonstrated that mineral deficiencies are present in most chronic illnesses and it is impossible to overcome these disorders unless mineral deficits are corrected. What conventional doctors and most mainstream organizations have failed to grasp is the difference between refined and unrefined salt. Unrefined salt contains over 80 minerals in a perfect proportion for our bodies. Our bodies were meant to function optimally with adequate mineral levels and adequate salt intake. Only the use of unrefined salt can provide both of these factors.

For the great majority of people a low-salt diet does not work. Patients do not feel well when sodium levels are lowered. Their energy level drops and they develop hormonal and immune system imbalances. It is refined salt that needs to be avoided – it is a toxic, dangerous substance that fails to provide the body with any benefit. Unrefined salt should be the salt of choice. 🌊

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